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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the above-identified application:

1. (Currently Amended) A method for providing audio feedback regarding the operation of an aircraft, comprising:

receiving audio inputs from a plurality of microphones, wherein the plurality of microphones are disposed adjacent to at least one aircraft component, wherein the at least one aircraft component is a sound source;

detecting an aircraft operation that does not have an audible sound associated therewith;

adding synthesized sounds to the audio inputs that correspond to the detected aircraft operation;

mixing the audio inputs; and

providing an audio output to a speaker in response to the mixing step, wherein the audio output indicates operation of the at least one aircraft component.

2. (Original) The method of claim 1, further comprising:

providing settings to the mixing step, wherein the settings are based on the audio inputs and a psycho-acoustic model.

3. (Original) The method of claim 2, further comprising:

determining masked signals based on the frequency and amplitude of the audio inputs and the psycho-acoustic model;

determining an unmasking strategy based on the masked signals; and

providing the settings based on the unmasking strategy.

4. (Original) The method of claim 1, wherein the speaker is an ambient speaker.

5. (Original) The method of claim 1, wherein the speaker is contained in a headset.

6. (Original) The method of claim 2, wherein the settings comprise:

at least one of level, pan, and equalization settings.

7. (Original) The method of claim 1, wherein the mixing step is accomplished via an automatic mixer, and further comprising:

overriding the automatic mixer with a manual mixer, wherein the manual mixer comprises at least one of a level, pan, and equalization control inputs.

8. (Previously Presented) The method of claim 1, wherein microphones are placed on multiple elements selected from the group consisting of:

an airframe, an engine, a flap, a brake, a gear, a pump, and a cockpit.

9. (Canceled).

10. (Currently Amended) The method of claim [[9]] 1, wherein the detected aircraft operation comprises at least one of:

a hydraulic operation, an electrical system operation, an aircraft control operation, and a fuel transfer operation.

11. (Original) The method of claim 1, further comprising:

canceling noise from the audio inputs.

12. (Currently Amended) An aircraft, comprising:

an airframe;

at least one aircraft component coupled to the airframe; and

an audio feedback system, comprising:

a plurality of microphones disposed adjacent to the at least one aircraft component,

an analysis system that:

receives audio inputs from the microphones,

detects an aircraft operation that does not have an audible sound associated therewith,

adds synthesized sounds to the audio inputs that correspond to the detected aircraft operation, and

provides settings to an automatic mixer that mixes the audio inputs, wherein the recommended settings are based on the audio inputs and a psycho-acoustic model.

13. (Original) The aircraft of claim 12, wherein the analysis system further:

determines masked signals based on the frequency and amplitude of the audio inputs and the psycho-acoustic model;

determines an unmasking strategy based on the masked signals; and

provides the settings to the automatic mixer based on the unmasking strategy.

14. (Original) The aircraft of claim 12, wherein the automatic mixer:

mixes the audio inputs based on the settings; and

provides the mixed audio inputs to a speaker.

15. (Original) The aircraft of claim 14, wherein the speaker is an ambient speaker.

16. (Original) The aircraft of claim 14, wherein the speaker is contained in a headset.

17. (Original) The aircraft of claim 12, wherein the settings comprise:

at least one of level, pan, and equalization settings.

18. (Original) The aircraft of claim 12, wherein the audio feedback system further comprises:

a manual mixer comprising level, pan, and equalization control inputs, wherein the manual mixer overrides the automatic mixer.

19. (Original) The aircraft of claim 12, wherein the aircraft component is one of:

the airframe, an engine, a flap, a brake, a gear, a pump, and a cockpit.

20. (Original) The aircraft of claim 12, wherein the aircraft component is coupled directly to the airframe.

21. (Original) The aircraft of claim 12, wherein the aircraft component is coupled indirectly to the airframe.

22. (Canceled).

23. (Currently Amended) The aircraft of claim [[22]] 12 wherein the detected aircraft operation comprises at least one of:

a hydraulic operation, an electrical system operation, an aircraft control operation, and a fuel transfer operation.

24. (Currently Amended) An audio feedback system, comprising:

at least one microphone for receiving sounds from at least one sound source; and

an analysis system that:

receives audio inputs from the microphone,

detects aircraft operations that do not have an audible sound associated therewith,

adds synthesized sounds to the audio inputs that correspond to the detected aircraft operations, and

provides settings to an automatic mixer that mixes the audio inputs, wherein the recommended settings are based on the audio inputs and a psycho-acoustic model.

25. (Original) The audio feedback system of claim 24, wherein the analysis system further:

determines masked signals based on the frequency and amplitude of the audio inputs and the psycho-acoustic model;

determines an unmasking strategy based on the masked signals; and

provides the settings to the automatic mixer based on the unmasking strategy.

26. (Original) The audio feedback system of claim 25, wherein the automatic mixer:
mixes the audio inputs based on the settings; and
provides the mixed audio inputs to a speaker.

27. (Original) The audio feedback system of claim 26, wherein the speaker is an ambient speaker.

28. (Original) The audio feedback system of claim 26, wherein the speaker is contained in a headset.

29. (Original) The audio feedback system of claim 24, wherein the settings comprise:
at least one of level, pan, and equalization settings.

30. (Original) The audio feedback system of claim 25 further comprising:
a manual mixer comprising level, pan, and equalization control inputs, wherein the manual mixer overrides the automatic mixer.

31. (Original) The audio feedback system of claim 25, wherein the sound source is at least one aircraft component.

32. (Original) The audio feedback system of claim 31, wherein the aircraft component is at least one of:
an airframe, an engine, a flap, a brake, a gear, a pump, and a cockpit.

33. (Canceled).

34. (Currently Amended) The audio feedback system of claim [[33]] 34 wherein the detected aircraft operations comprise at least one of:

hydraulic operations, electrical system operations, aircraft control operations, and fuel transfer operations.